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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,272	09/15/2003	Tohru Segawa	37904-0033.1	3434

28481 7590 10/29/2004  
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EXAMINER

VINCENT, SEAN E

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 10/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/664,272

Applicant(s)

SEGAWA ET AL.

Examiner

Sean E. Vincent

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 13-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 09/962,918.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 39 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recites the limitation "the second processing solution" in line 5. There is insufficient antecedent basis for this limitation in the claim. It is likely that claim 39 was intended to depend from claim 38.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 13 and 22 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shinetsu '98 (JP 10-059744). Shinetsu '98 taught methods of producing silica glass jigs for semiconductor processing including sandblasting the jigs followed by hydrofluoric acid etching to create projections on projected structures on the surface of the jig. (see the machine translation: abstract, claims 1-5, [0010], and the figures).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 14-19, 21 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinetsu '98.

8. Shinetsu '98 taught methods of producing silica glass jigs for semiconductor processing including sandblasting the jigs followed by hydrofluoric acid etching to create projections on projected structures on the surface of the jig. The width of the recesses on the surface were 0.5 to 5µm. Shinetsu '98 offered no further specifics regarding the roughness or the sizes of the smaller and larger projections illustrated in the figures. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to expect the size of the projections and the accompanying roughness measurements to approximate the claimed ranges because the claimed ranges are merely optimal for the intended use of the semiconductor processing jig. It is

the position of the Examiner that it would not require undue experimentation by a person of ordinary skill in the art at the time the invention was made to find these conditions beneficial.

9. Claims 20, 23-27 and 29-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinetsu '98 in view of Shinetsu '95 (JP 07-267679).

10. Shinetsu '98 did not teach hydrogen fluoride used in conjunction with ammonium fluoride and/or acetic acid. Shinetsu '95 taught the treatment of silica semiconductor processing jigs with mixtures of hydrogen fluoride with ammonium fluoride and/or acetic acid and water in various proportions for the purpose of forming "irregularity" on silica surfaces (see machine translation [0005]-[0007]). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the etching mixtures of Shinetsu '95 in the process of Shinetsu '98 because Shinetsu '95 taught that "degradation of quartz glass on the strength is not caused". The mixtures shown in the tables of Shinetsu '95 appear to satisfy the applicant's claimed proportion ranges.

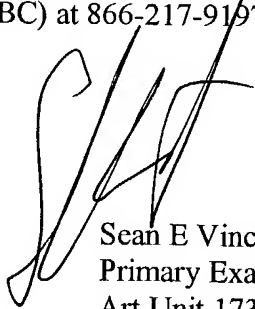
11. Claims 38-40 (assuming 39 should depend from 38) are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinetsu '95.

12. Shinetsu '95 taught etching treatments of semiconductor treatment jigs made of quartz glass by etching with hydrogen fluoride used in conjunction with ammonium fluoride and/or acetic acid (see discussion above). Shinetsu '95 did not specifically mention a double immersion process in which a first processing solution was used in a first etching step and a second processing solution was used in a second etching step. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to perform two steps with etchant mixtures having different concentrations because that would have been a mere repetition of a

single etching step. The tables of Shinetsu '95 appear to disclose the etchant mixtures claimed. A person of ordinary skill in the art would have expected that a certain surface effect would be obtainable from each of the disclosed mixtures as clearly shown in the tables of Shinetsu '95. It would not have required undue experimentation to determine the added benefit of multiple etching steps, even with different etchant mixtures in order to design any desired surface features on the quartz jig.

### ***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean E. Vincent whose telephone number is (571) 272-1194. The examiner can normally be reached on M - F (8:30 - 6:00).
14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P. Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.
15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sean E Vincent  
Primary Examiner  
Art Unit 1731

S Vincent  
Wednesday, October 27, 2004